

YOUR MISSION!

Re-create Archimedes' Principle by using simple method. Students will learn the story and history of how Archimedes came to understand and create the Buoyancy test.

Materials

- 1 spring balance
- 1 heavy object (about 500 g)
- water
- 1000 ml beaker
- 500 ml beaker
- scale to measure displaced water



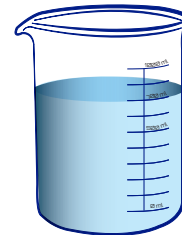
Ensign

1. Read the history and background science information for this activity. Organize your work station to start step one of the buoyancy test.



Lieutenant

3. Fill up your 1000 ml Beaker with water.



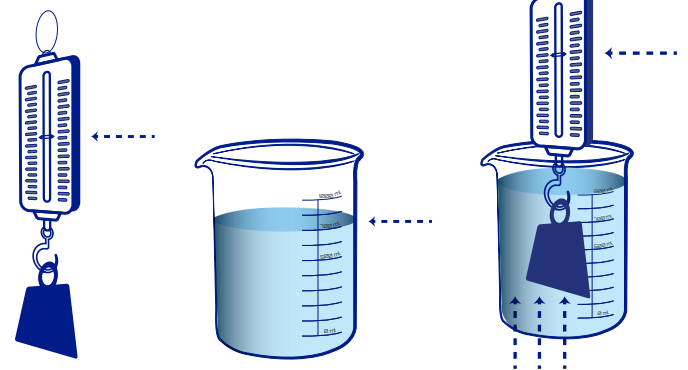
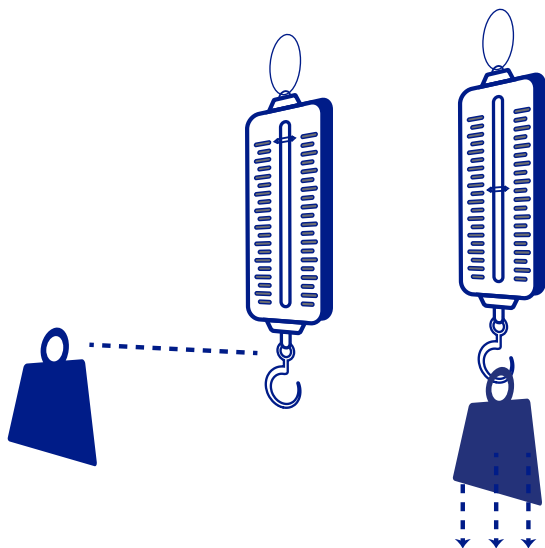
Lieutenant
Junior Grade

2. Attach the weight to your spring balance. Measure the weight of the object. Record the weight.



Lieutenant
Commander

4. Immerse the weight into the beaker using the spring balance. Notice the water and the weight of the object. Discuss your findings.



Commander

5. Calculate the Apparent weight of the object. Find the loss in weight. Record your findings. Get ready for Part 2!

YOUR MISSION!

Re-create Archimedes' Principle by using simple method. In this lesson we will have the students use the displaced water theory to understand buoyancy. This lesson may get messy, so we advise students to preform this test in an area with a sink or with towels.



Ensign

1. Take the calculations from Part 1 to measure the water displacement of the weighted object. This will show what Archimedes meant by saying "upward force is equal to the weight of the fluid displaced by it".



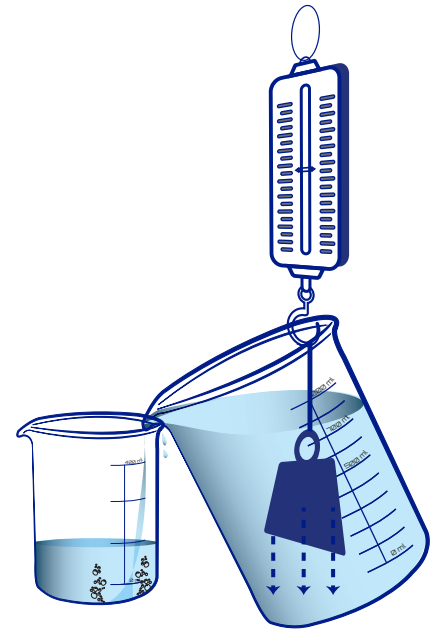
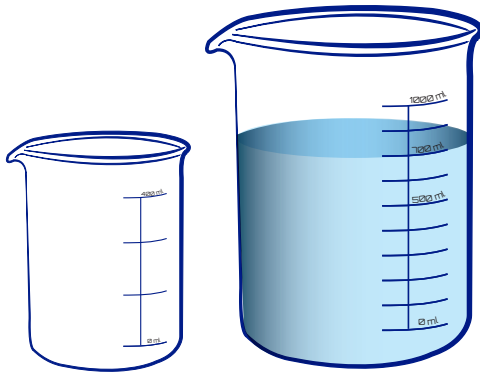
Lieutenant
Commander

4. Take your spring scale with the weighted object attached and submerge it into the water until the entire object is covered. As water drips out the beaker try your best to collect all of the water into the smaller beaker.



Lieutenant
Junior Grade

2. With the object still attached to the spring scale, take the empty beaker and place it to the side.



Commander

5. Once the object is fully immersed and all of the water is displaced, remove the object and set aside. Using your scale, measure the amount of displaced liquid from the small beaker. Using those calculations measure the weight of the water and compare with the weight of the upward force. Record your findings. Are they the same? Discuss with your classmates.



Lieutenant

3. Tilt the larger beaker towards the small beaker.

